

References

Masciadri, E. 2008, *The Messenger*, 134, 53

Links

¹ Workshop web page: <http://site2010.sai.msu.ru/>

² Workshop web page:
<http://www.dfa.uv.cl/sitetestingdata/>

³ IAU Site Testing Instruments Working Group:
<http://www.ctio.noao.edu/science/iauSite/>

⁴ Sharing of site testing data:
<http://project.tmt.org/~aotarola/ST>



Figure 2. The participants at the workshop on site testing atmospheric data in Valparaíso, Chile arrayed by the harbour.

ESO's Hidden Treasures Competition

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ESO's Hidden Treasures astrophotography competition gave amateur astronomers the opportunity to search ESO's Science Archive for a well-hidden cosmic gem. The competition attracted nearly one hundred entries and the winners were announced in January 2011. Astronomy enthusiast Igor Chekalin from Russia won the first prize — a trip to the Very Large Telescope at Paranal — in this difficult but rewarding challenge.

Pictures can be powerful; and astronomical images even more so: these views of distant cosmic worlds can inspire and help to connect us with the Universe. The images could almost be works of art when particularly intriguing shapes and phenomena are captured and presented in an appropriate way. Astronomical pictures are also an efficient way to pique people's interest in astronomy and science.

Over the past two and a half years ESO has boosted its production of outreach images, both in terms of quantity and quality, so as to become one of the best sources of astronomical images. In achieving this goal, the whole work flow from the initial production process, through to publication and promotion has been optimised and strengthened. The final outputs have been made easier to re-use in other products or channels by our partners.

While the pictures of the Universe that can be seen in ESO's releases are impressive, many hours of skilful work are required to first find datasets that can become useful "public" representations of the Universe, and then to process these into colour images. Along the way significant work goes into the astronomical processing — to assemble the raw greyscale data captured by the telescopes, to correct for the instrument signature, and to process the graphics — and in compressing the image's dynamic range to fit within the limited gamut of today's monitors and printers, enhancing them so as to bring out the details contained in the astronomical data¹.

The ESO Science Archive stores all the data acquired on Paranal, and most of the data obtained on La Silla since the late 1990s. This archive constitutes a goldmine commonly used for science projects (e.g., Haines et al., 2006), and for technical studies (e.g., Patat et al., 2011). But besides their scientific value, the imaging datasets in the archive also have great outreach potential.

ESO has a small team of professional image processors, but for ESO's Hidden Treasures competition, the experts decided to give astronomy and photography enthusiasts the opportunity to show the world what they could do with the data contained in the archive. A simplified interface to the ESO Science Archive was prepared by the Archive Group for this purpose and the goal of the competition seemed at first glance simple: to produce a good outreach image with a dataset from the ESO Science Archive that had not yet been published.

The enthusiasts who responded to the call submitted nearly 100 entries in total — far exceeding initial expectations, given the difficult nature of the challenge. Navigating the Science Archive has a steep learning curve for a new user due to the

inherent complexity of the data. In addition, over the past few years we have systematically scoured the archives for valuable datasets that would allow us to release inspiring images of the Universe and thereby already found most of the available appropriate datasets. This competition was not a challenge for the faint-hearted, requiring both an advanced knowledge of data processing and an artistic eye. Digging through many terabytes of astronomical data, the entrants had to identify a series of frames that would reveal the hidden beauty of a celestial object.

The chance of a great reward for the talented winner was enough to spur on the competitors: the first prize being a trip to the Very Large Telescope, with guided tours and the opportunity to participate in a night's observations. Runners-up prizes included an iPod, books and DVDs. Furthermore, the highest ranked images were to be released for the world to see on www.eso.org as Photo Releases or Pictures of the Week, co-crediting the winners and promoted on ESO's Facebook page, Twitter feed, uploaded on Wikipedia and on ESO's Flickr account².

The jury, composed of outreach and image processing experts and astronomers, evaluated the entries based on the quality of the data processing, the originality of the image and the overall aesthetic feel. As several of the highest ranked images were submitted by the



Figure 1. Astronomy enthusiast Igor Chekalin from Russia, who participated in ESO's Hidden Treasures 2010 astrophotography competition and won the first prize: a trip to the VLT.

same people, the jury decided to make awards to the ten most talented participants, so as to give more people the opportunity to win a prize and to reward their hard work and talent.

The prize winners were:

- First prize, a trip to Paranal and other ESO outreach products: Igor Chekalin (Russia).
- Second prize, an iPod Touch and other ESO outreach products: Sergey Stepanenko (Ukraine).

- Third prize, VLT laser cube model and other ESO outreach products: Andy Strappazzon (Belgium).
- Fourth to tenth prizes, *Eyes on the Skies* book and DVD, and other ESO outreach products: Joseph (Joe) DePasquale (USA); Manuel (Manu) Mejias (Argentina); Alberto Milani (Italy); Joshua (Josh) Barrington (USA); Oleg Maliy (Ukraine); Adam Kiil (United Kingdom); Javier Fuentes (Chile).

The overall winner, Igor Chekalin (seen in Figure 1) from Russia, who won the trip to Paranal says, "It was a great experience and pleasure to work with such amazing data. As an amateur astrophotographer, this was the most difficult processing and post-processing job I have ever done. My participation in the Hidden Treasures competition gave me a range of challenges, from installing new software to studying techniques and even operating systems that I did not know before."

Some of the images submitted by the ten winners are shown. The image of the reflection nebula Messier 78 selected by Igor Chekalin is shown in the *Astronomical News* section, page (p. 46); he also produced the image of the pair of galaxies NGC 3169 and NGC 3166 shown in Figure 2. Figure 3 shows a colour image of the low-mass star-forming region NGC 6729 by Sergey Stepanenko. The winning images can be viewed from the web page announcing the winners³.



Figure 2. (Left) The colour image of the pair of galaxies NGC 3169 and NGC 3166, a field also containing the recent supernova SN 2003cg, obtained with the Wide Field Imager on the MPG/ESO 2.2-metre telescope and processed by Igor Chekalin.

Figure 3. (Right) The low-mass star-forming region NGC 6729 is shown in a VLT FORS1 colour composite of H α and S II exposures, processed by the second-prize winner Sergey Stepanenko.



Reflecting on the usefulness of the Hidden Treasures competition, we can say that it undoubtedly has served to further increase the visibility of ESO and its data. Almost thirty of the submitted images have some potential to be released publicly, and half a dozen were so impressive that they will become ESO Photo Releases over the next few months. It is also interesting that four of the best

of the datasets had already been identified by our team prior to the competition, and were at some stage of processing, showing that the ESO Science Archive has few hidden gems remaining.

References

Haines, C. P. et al. 2006, MNRAS, 371, 55
 Patat, F. et al. 2010, A&A, in press, arXiv:1011.6156

Links

¹ This work is carried out using the purpose-built software developed in-house called the ESO/ESA/NASA FITS Liberator, available at: http://www.spacetelescope.org/projects/fits_liberator/.

² To follow ESO's social media accounts access: <http://www.facebook.com/ESO Astronomy> or http://twitter.com/ESO_Observatory

³ The web page of the competition is at: <http://www.eso.org/public/outreach/hidden treasures>

Fellows at ESO

Andrea Ahumada

I have always been fascinated by astronomy. As a young girl, when I watched the first episode of *Cosmos* (by Carl Sagan), I had a dream: to become an astronomer. Now, after almost 30 years, I am writing these lines as an ESO fellow. This achievement was possible because my parents and my oldest sister were pivotal in my career: they believed in me and supported my dreams.

Cordoba (Argentina), where I was born, has a long and proud history in astronomy, so, I had the opportunity to study astronomy at the FaMAF (Facultad de Matematica, Astronomia y Fisica), and finally, under the supervision of Professor J. J. Claria, I obtained my PhD at the National University of Cordoba (Argentina) in 2004. Since then, my main topics of research have been Galactic open clusters and star clusters of the Magellanic Clouds. During my career, as an observational astronomer, I have been able to observe with many different telescopes, and fortunate to go from small (at the Bosque Alegre Observatory, Argentina) to big ones (at Paranal Observatory). I remember the first time that I visited those telescopes, I was fascinated!

I joined ESO in April 2008, and as an Argentinian, I only had to cross the Andes to come to Chile. With functional duties



Andrea Ahumada

at Paranal Observatory, where I work with the world's most powerful telescopes and instruments, I have learnt new technical skills, with the opportunity to observe, in the same night, with different techniques, a large spectrum of astronomical objects, from comets to very distant objects, such as gamma-ray bursts. During the night shifts, I am the support astronomer for Antu's (UT1) instruments. After all this time in Paranal, I still continue to be amazed at how unique it is to spend a night there.

Working at ESO has been very beneficial for my development as a scientist, providing me with important opportunities to advance in my research and to expand my network of scientific collaborations, while continuing with the old ones. ESO

has also given me the opportunity to do outreach. I feel that I am lucky to do what I do for living, so outreach is very important to me, because in this way I can give something back to people.

In two months I will move to Bologna Observatory (Italy) for my fourth year as an ESO fellow. This is a wonderful scientific opportunity for me because I have started working on the BOCCE (Bologna Open Clusters Chemical Evolution) Project. In Bologna there will be new challenges, and I am very happy about having the chance to live in Italy, where my great-grandparents came from.

While I am writing this, my last *turno* at Paranal is coming up soon. I feel strange and a little sad to be leaving. Most of those whom I have met in Santiago and Paranal are really nice people; working here I had the opportunity to make new friends, and also I had the chance to meet Juan Manuel. Memories of the three years that I have spent in this beautiful country will stay for ever in my heart.

Bram Venemans

When I was around 12 years old, I became interested in astronomy for the first time. Amateur astronomers had organised a public viewing of a lunar eclipse, which made a big impression